

## Characteristics of Injury in Women and Children in UGM (Universitas Gadjah Mada) Academic Hospital Yogyakarta Indonesia 2020-2021

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### Abstract:

Violence and traffic accident are two serious problems that must be tackled by all countries. Sustainable Development Goals (SDGs) has stated a goal which assist the elimination of violence against women and children by 2030. At the same time, The United Nations (UN) General Assembly also established the Decade of Action for Road Safety 2021-2030, with the goal of preventing at least 50% of road traffic deaths and injuries by 2030. This study aims to obtain the characteristics of injury in women and children and to determine the association of sociodemographic of the patient to the severity of injury. This descriptive observational with a cross-sectional method study obtained the data from the medical records of 801 patients from RS Akademik UGM Yogyakarta in January 2020 to December 2021. Univariate and bivariate analysis were done. The most common type of violence is physical violence, with contusion in women and abrasion in children being the most common wound types, and head as the most prevalent location of injury. In traffic accident cases, abrasion was the most common type of wound and lower extremity as the most common location. There is a significant relationship between the patient's age and the injury's severity, which brings them to either outpatient, inpatient and/or having surgery as medical treatment.

**Keywords:** Characteristics of Injury, Violence, Traffic Accident, Women, Children.

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## Introduction

Human Rights Reference 3 stated that those who are classified as vulnerable groups are refugees, internally displaced Persons (IDPs), national minorities, migrant workers, indigenous peoples, children, and women. Violence against women and children is a concern in all countries, including developing and industrialized countries, including Indonesia. Violence against women and children is a very serious problem and must be tackled by all countries. The world's commitment to resolving the problem of violence against women and children is even expressly expressed in certain aims notably in the Sustainable Development Goals (SDGs) and backed by other targets that indirectly assist the elimination of violence against women and children ([www.violenceagainstchildren.un.org](http://www.violenceagainstchildren.un.org); [www.who.int](http://www.who.int)).

Kementerian Pemberdayaan Perempuan dan Perlindungan Anak (KemenPPPA) Republik Indonesia is a ministry in the Indonesian cabinet that deals with issues related to efforts to realize women's empowerment and child protection. Yearly, the ministry reports violence cases against women and children in Indonesia. In 2020, the number of cases of violence against women has reached 299,911 cases. However, in 2020, complaint data to Komisi Nasional Perempuan drastically increase of 60% from 1,413 cases in 2019 to 2,389 cases in 2020. DI Yogyakarta enlisted as the eight highest province in 2020 with reported violence against women cases ([www.komnasperempuan.go.id](http://www.komnasperempuan.go.id)). Whereas in 2021, the number of cases has increased sharply to 338,496 cases. However, it should be noted that since the Covid-19 pandemic, not all institutions returned the same questionnaire data as in 2020 because several institutions were not operating, the case documentation system was inadequate, and limited resources and service institutions ([www.komnasperempuan.go.id](http://www.komnasperempuan.go.id)).

The number of reported cases of violence against children, too, has increased from 11,278 cases in 2020 to 14,517 cases in 2021. The number of victims of violence against children also increased from 12,425 in 2020 and became 15,972 in 2021. When broken down, reports of violence against children consist of cases of sexual violence (45%), psychological violence (19%), and physical violence (18%).

A traffic accident is an unintentional road incident where a motorized vehicle collides with another object and causes damage. Sometimes these accidents can result in injury or death to people or animals. As reported by the Badan Perencanaan Pembangunan

Daerah (Bappeda) Daerah Istimewa Yogyakarta, the number of traffic accidents is increasing every year. In 2020, the number of accidents reached 4,559 to 5,350 in 2021. Specifically, the death toll will reach 346 people in 2020 and 452 people in 2021. while the number of minor injuries reached 5,715 in 2020 and 6,390 in 2021, the number of serious injuries will be 1 person in 2020 and 6 people in 2021. Material losses reaches Rp 2.111.235.500,00 in 2020 and Rp 2.393.687.000,00 in 2021 ([www.bappeda.jogjaprovo.go.id](http://www.bappeda.jogjaprovo.go.id)).

Clinical forensic is an area of forensic which related to medical examination and assessment on individuals who have been (or are suspected to have been) injured or killed by external influences also individuals who are suspected of having injured another person (Eriksson, 2016). Three scopes that are included in clinical forensics are traffic accident, violence, and sexual assault.

## Methodology

### Study Design

This study is a descriptive observational study with cross-sectional design. The data is collected from the medical records of women and child patients which are enlisted as new patients in RS Akademik UGM Yogyakarta from January 2020 to December 2021 obtained with International Classification of Diseases 10th Revision (ICD-10) with road traffic injury and violence cases. Postoperative patients, post-hospitalized patients, and patients with incomplete data were excluded. A total of 801 patients were included in the study. This study used an accidental sampling, a non-probability sampling technique in which the study does not include random selection of subjects.

### Data Analysis

Data analysis is done using IBM® SPSS® Statistics 26. Descriptive analysis is done in which univariate analysis is used to descriptive analyze the characteristics of the patients. Bivariate analysis is used to test the significance of the patient's sociodemographic data with the severity of the injury in terms of medical treatment.

### Ethical Consideration

This study protocol was a part of a larger study entitled "Model Penanganan Kasus Forensik Klinik di Rumah Sakit Akademik Universitas Gadjah Mada" and was submitted to the Research Ethical Committee (MHREC) of Faculty of Medicine, Nursing, and

Public Health Universitas Gadjah Mada. Ethical clearance has been issued by the Research Ethical Committee with the reference number of KE/FK/0498/EC.

**Results and Discussion**

*Characteristics Of Patients*

There was a total of 801 research subjects obtained. There were 55 incidents of violence and 746 incidents of traffic accidents. Descriptive analysis is done to determine patients' characteristics based on their sociodemographic data on age, sex, job, and address as shown in Table 1. It can be observed that the most common age group is 18-25 years old, boys in children category, student as job, and Kabupaten Sleman as the most resided district. There are two registered addresses in medical records of RS Akademik UGM Yogyakarta. The first one is based on their Kartu Tanda Penduduk (KTP), and the second one is based on their domicile – for patients who are not from Daerah Istimewa Yogyakarta and listed their domicile in Daerah Istimewa Yogyakarta. The high result might be caused by patients who are not originally from Daerah Istimewa Yogyakarta do not list their domicile in Daerah Istimewa Yogyakarta.

**Table No. 1: Characteristics of Patients**

Variable	Women		Children		Total	
	N	%	N	%	N	%
<b>Age</b>						
▪ 0-5 years old	-	-	25	11	25	2
▪ 6-10 years old	-	-	27	12	27	3
▪ 11-17 years old	-	-	179	77	179	22
▪ 18-25 years old	238	42	-	-	238	30
▪ 26-35 years old	139	24	-	-	139	17
▪ 36-45 years old	60	11	-	-	60	7
▪ >45 years old	130	24	-	-	130	16
<b>Sex</b>						
▪ Female	654	81.6	87	37.7	654	81.6
▪ Male	-	-	144	62.3	-	-
<b>Job</b>						
▪ BUMN-BUMD-BANK	4	0.7	-	-	4	0.5
▪ Laborer	19	3.4	-	-	19	2.4
▪ Government employee (PNS)	21	3.7	-	-	21	2.6
▪ Student	196	34.8	167	72.3	364	45.3
▪ Farmer/fisherman	4	0.7	-	-	4	0.5
▪ Private employee	122	21.6	-	-	122	16.4
▪ Entrepreneur	22	3.9	-	-	24	3
▪ Unemployed	43	7.6	21	9.1	65	8.1
<b>Address</b>						
▪ Kota Yogyakarta	37	6.6	18	7.8	55	6.9
▪ Kabupaten Sleman	361	64.0	177	76.6	541	67.5
▪ Kabupaten Bantul	26	4.6	9	3.9	35	4.4
▪ Kabupaten Kulon Progo	8	1.4	2	0.9	10	1.2
▪ Kabupaten Gunung Kidul	10	1.8	3	1.3	14	1.7
▪ Others	1	21.3	20	8.7	142	17.7

*Characteristics Of Injury In Violence Cases*

The characteristics of injury in violence cases against women and children are shown below in Table 2. It

can be observed that physical violence is found as the most common type of violence with contusion as the most common wound type in women and abrasion in children. Both women and children's location of injury frequently found on head. Most of the patient opt for outpatient treatment.

**Table No. 2: Characteristics of Injury in Violence Cases**

Variable		Women N (%)	Children N (%)	Total N (%)
<b>Type of Violence</b>	Physical	8 (80)	44 (100)	53 (96.4)
	Sexual	2 (20)	-	2 (3.6)
	Physical and Sexual	-	-	-
<b>Type of Wound</b>	<b>Blunt</b>			
	Contusion	4 (40)	22 (50)	27 (49.1)
	Abrasion	6 (60)	13 (29.5)	19 (34.5)
	Laceration	1 (10)	7 (15.9)	8 (14.5)
	Fracture	-	1 (2.3)	1 (1.8)
	Dislocation	-	-	-
	<b>Sharp</b>			
Cut	-	2 (4.5)	2 (3.6)	
Stab	1 (10)	-	1 (1.8)	
<b>Location of Injury</b>	Head	5 (50)	28 (63.6)	34 (61.8)
	Neck	-	7 (15.9)	7 (12.7)
	Chest	2 (20)	3 (6.8)	5 (9.1)
	Abdomen	-	-	-
	Back	1 (10)	-	1 (1.8)
	Anogenital	2 (20)	-	2 (3.6)
	Upper extremity	3 (30)	19 (43.2)	22 (40)
	Lower extremity	2 (20)	12 (27.3)	14 (25.5)
<b>Medical Treatment</b>	Inpatient	1 (10)	-	1 (1.8)
	Outpatient	7 (70)	37 (84.1)	45 (81.8)
	Surgery	-	-	-
	Refusing treatment	-	1 (2.3)	1 (1.8)

*Characteristics Of Injury In Traffic Accident Cases*

The characteristics of injury in traffic accident cases in both women and children are shown in the following table. It can be observed that the most common type of wound was abrasion (57%), lower extremity as the most common location of injury (58.7%), and most of the patients were reported as outpatients (61.7%).

**Table No. 3: Characteristics of Injury in Traffic Accident Cases**

Variable		Women N (%)	Children N (%)	Total N (%)
<b>Type of Wound</b>	<b>Blunt</b>			
	Contusion	16 (7.2)	70 (13.4)	86 (11.5)
	Abrasion	136 (61.5)	287 (54.9)	425 (57)
	Laceration	51 (23.1)	102 (19.5)	153 (20.5)
	Fracture	39 (17.6)	81 (15.5)	120 (16.1)
	Dislocation	2 (0.9)	4 (0.8)	6 (0.8)
<b>Sharp</b>	Cut	-	1 (0.2)	1 (0.1)
	Stab	-	1 (0.2)	1 (0.1)
<b>Location of Injury</b>	Head	74 (33.5)	147 (28.1)	221 (29.6)
	Neck	5 (2.3)	5 (1)	10 (1.3)
	Chest	10 (4.5)	24 (4.6)	34 (4.6)
	Abdomen	9 (4.1)	23 (4.4)	32 (4.3)
	Back	4 (1.8)	20 (3.8)	24 (3.2)
	Anogenital	1 (0.5)	5 (1)	6 (0.8)
	Upper extremity	101 (45.7)	240 (45.9)	343 (46)
	Lower extremity	123 (55.7)	313 (59.8)	438 (58.7)
<b>Medical Treatment</b>	Inpatient	3 (1.4)	9 (1.7)	12 (1.6)
	Outpatient	141 (63.8)	319 (61)	460 (61.7)
	Surgery	17 (7.7)	51 (9.8)	68 (9.1)
	Refusing treatment	19 (8.6)	41 (7.8)	60 (8)

**Sociodemographic To Severity Of The Injury**

Table 4 below shows the relationship of the severity of injury among all injury cases according to the sociodemographic of the patients. The results of the severity of the injury can be seen on the medical treatment performed. It can be categorized into negative for outpatients, positive for inpatient treated and/or having a surgery. Patients who refuse any treatment will not be included in this analysis because the data cannot be analyzed. For sociodemographic data, age characteristics will be regrouped into 0-17 years old, 18-45 years old, and >45 years old. The job variable will be divided into office worker which includes government employee (PNS), private employee, BUMN-BUMD-BANK; non-office worker (farmer/fisherman, laborer, entrepreneur); student; and unemployed.

Moreover, the address characteristics will be regrouped into Kabupaten Sleman; other districts in DI Yogyakarta including Kota Yogyakarta, Kabupaten Sleman, Kabupaten Bantul, Kabupaten Kulon Progo, and Kabupaten Gunung Kidul; and other than DI Yogyakarta. The addresses are regrouped since the RS Akademik UGM Yogyakarta’s location in Kabupaten Sleman and the highest address found in both cases are from Kabupaten Sleman (Table 1). In this step, the data are analyzed using Chi-Square method, with the result as shown in the following table.

**Table No. 4: Relationship Between Sociodemographic to Severity of Injury in Terms of Medical Treatment**

Variable	Outpatient	Inpatient/Surgery	p-value
<b>Age</b>			
▪ 0-17 years old	148	21	0.008 <sup>†</sup>
▪ 18-45 years old	296	40	
▪ >45 years old	60	20	
<b>Sex</b>			0.525 <sup>†</sup>
▪ Female	409	68	
▪ Male	96	13	
<b>Job</b>			0.085 <sup>†</sup>
▪ Office worker	98	21	
▪ Non-office worker	28	7	
▪ Students	256	28	
▪ Unemployed	36	7	
<b>Address</b>			0.383 <sup>†</sup>
▪ Kabupaten Sleman	331	59	
▪ Other districts in DI Yogyakarta	72	11	
▪ Other than DI Yogyakarta	99	11	

<sup>†</sup>Pearson Chi-Square, <sup>‡</sup>Fisher’s exact test

**Discussion**

Based on the sociodemographic data in Table 1, it is found that the most frequent age in patients with injury is 18-45 years old age group. Worldwide, every year, injuries and violence kill 4.4 million people and account for nearly 8% of all deaths ([www.who.int](http://www.who.int)). Three of the top five causes of death according to World Health Organization for people aged 5 to 29 are injury-related, namely motor vehicle accidents, homicide, and suicide. According to Riyadina et al. (2009), adults (15-59 years) have a 3.31 times greater risk of injury due to traffic accident if the others have been treated and controlled. The findings of a survey conducted by Jasa Marga and WHO, the adult age group faces the greatest risk, particularly during the productive age, when respondents have a higher level of mobility and participate in more activities outside the home than other age groups, putting them at greater risk of being involved in traffic accidents.

According to sex, in children, more injury cases occurred in boys. This has been stated by Centers for Disease Control and Prevention, that in 2018-2019, child unintentional injury death rates in the United States were the highest among boys, with age under 1 year old and 15-19 years old. Based on all employment data, students were found to be the most.

Based on the address on Table 1, the most resided district in DI Yogyakarta is Kabupaten Sleman, accounting for 362 cases in women and 177 cases in children. Kabupaten Sleman has always reached the highest total population in DI Yogyakarta, reaching 1.248.258 in 2020 (31,8%) and 1.265.429 in 2021 (31,8%)([www.yogyakarta.bps.go.id](http://www.yogyakarta.bps.go.id)).

According to the study’s findings, the most common age group in cases of violence against women, 53.5%

were found in the 26-35 years age group. Private employees make up 27.9% of them. Most of these cases (72.1%) were discovered by victims residing in Kabupaten Sleman. Table 2 shows that all of violence against women cases are found as physical violence (100%). The result is aligned with the data from RS Bhayangkara Manado in 2013, where the most common types of domestic violence among women were physical violence (93%), sexual violence (5%), and physical violence accompanied by sexual violence (2%). A study in RS Bhayangkara Semarang found that the common age group is 26-34 years old, 80% of them was physical violence with contusion as the most frequent type of wound.

A study from a social institution in DI Yogyakarta stated that cultural, economic, religious, and political issues all played a role in the occurrence of various incidences of violence by men against women. This is inextricably linked to society's low view of men and women's equality, which exists between encounters, and both are disadvantaged in this circumstance. The fundamental cause of this violence is socio-cultural elements, where patriarchal culture and gender inequity have taken root in people's lives and unilaterally weaken women (Farid, 2020).

Characteristics of injury in violence cases in Table 2 shows that contusions (50%) are the most common wound type in violence among women cases, and by abrasion (29.5%) and laceration (15.9%). According to the other research results at RS Bhayangkara Manado, contusion (69.86%), too, was the most common type of injury that occurred. This occurs because most perpetrators of domestic violence commit violent acts with the intention of teaching a lesson rather than causing fatal injuries (Molenaar *et al.*, 2015).

In this research, the most common location of injury in violence among women cases was head (63.6%), followed by upper extremity (43.2%) and lower extremity (27.3%). According to research at RS Bhayangkara Manado, the locations most frequently injured in cases of violence against women are the back of the head and the forehead. This occurred because the perpetrators used their hands to beat or hit the victim's head with tools such as wood or machetes, or even hit the victim's head against the wall, resulting in injuries to the back of the head and forehead (Molenaar *et al.*, 2015). According to a study in Chinese women, injuries to the upper third of the face and the back of the head were significantly related to punching a fist, whereas injuries to the middle third of

the face were significantly related to slapping (Wong *et al.*, 2014).

In the meantime, in violence against children's cases, violence was found to be more common in boys (80%) and aged 11-17 years (70%). In this case, all patients live in Kabupaten Sleman (100%). A study from Malang is in line with this study, where based on students aged 9-11 years, boys (56%) experience more violence (Andini, 2019). Another study in Jatinangor also shows that boys more prone to violence (53%) (Dewi *et al.*, 2017). More boys than girls in Indonesia are physically abused as children due to a culture in which it is more "open" for boys to express their experiences rather than girls (Kurniasari *et al.*, 2018). A study in Egypt discovered that girls were less likely to be abused by their mothers, but the reason why boys are more vulnerable to physical violence remains unknown; however, such punishment was seen as preparation for future adult roles and responsibilities, requiring more stringent physical discipline (Antai *et al.*, 2016).

The age group is consistent with the other findings of a study which found that violence against children aged 11-18 years is the most common, as children at this age have begun to mature, are easily influenced by environmental influences, and tend not to obey what their parents say (Widya *et al.*, 2017).

Physical violence in the form of abuse and domestic violence accounts for 80% of cases, while sexual violence accounts for 20%. A study in RS Bhayangkara Semarang also found physical violence in 69% of its violence against children cases (Rahmatika *et al.*, 2021). This might be caused by parents who suffered violence as children will repeat it as adults because they believe it is usual for them to endure it frequently at first (Praditama *et al.*, 2016). This demonstrates that educational patterns from parents are passed down from generation to generation (intergenerational transmission of violence). This incorrect viewpoint is still widely held by other parents today, with parents believing that harsh treatment is capable of developing a strong and good character for children in the future or at a time when children grow up (Noviana, 2015).

Another trigger is stress; many parents have great expectations for their children, but when they are unable to satisfy those expectations, parents employ threats and coercion to ensure that their children obey their wishes (Rahmatika *et al.*, 2021). Stress may also be caused by unemployment, illness, poor housing condition, larger family size rather than average, the

presence of a new baby, disable person existence in home, or death of a family (Andini, 2019).

Among all violence against children’s cases in RS Akademik UGM Yogyakarta, it must be noted that there are 20% sexual violence cases found. It is because children are a vulnerable group to sexual violence because they are always portrayed as weak or helpless figures and have a high reliance on the adults around them; this makes children helpless when threatened not to reveal what they are going through (Noviana, 2015). Patriarchal culture, a lack of understanding of child protection laws and children’s rights, the low bargaining position of children in the family, children who are unaware of sexual violence, and the influence of advances in information and technology are all trigger factors for sexual violence in general (Widiastuti, 2019).

The most common wound type found in violence among children in this study as seen on Table 2 is abrasion (60%), followed with contusion (40%). These findings differ from RS Bhayangkara Semarang in which the most common types of violence against children were physical violence were contusions (39%), followed with laceration (34%) (Widya et al., 2017).

The most common found location of injury in violence among children was head (50%), the second was upper extremity (30%). Another study conducted at RS Bhayangkara Semarang discovered that violence in children was mostly concentrated on the face. This is because they want to teach lessons in areas where perpetrators can easily access them, rather than causing fatal wounds (Widya et al., 2017).

If examined further, based on the results of the questionnaire obtained in this study, the characteristics of perpetrators in the form of sex and the relationship of perpetrator to the victim can be obtained. The following are tables of characteristics of perpetrators in violence against women and children.

**Table No. 5: Characteristics of Perpetrators in Violence Against Women**

Variable	N	%
<b>Sex</b>		
▪ Female	1	2.3
▪ Male	20	46.5
<b>Relationship of Perpetrator to Women</b>		
▪ Husband	12	27.3
▪ Non-core family	3	6.8
▪ Others		
- Boyfriend	6	13.6
- Ex-husband	1	2.3
- Friend	1	2.3
- Known people	2	4.5
- Unknown people	7	15.9

**Table No. 6: Characteristics of Perpetrators in Violence Against Children**

Variable	N	%
<b>Sex</b>		
▪ Female	-	-
▪ Male	3	30
<b>Relationship of Perpetrators to Children</b>		
▪ Parents	3	30
▪ Non-core family	-	-
▪ Other		
- Neighbor	1	10

According to the data in Table 5, the majority of the 21 cases of violence against women were committed by males, with 20 cases (46.5%). There are 32 cases with data provided with the relationship of perpetrator and victim, and it is discovered that categories other than family have the greatest number of cases. Ex-husbands (2.3%), friends (2.3%), known people (4.7%), boyfriends (14%), and strangers (13.9%) were among the perpetrators, according to the next questionnaire question.

Table 6 depicts the characteristics of perpetrators of violence against children. Even though the amount of data on violence against children’s perpetrators is not representative, it can be found that out of 10 cases, there are 3 cases (30%) had male perpetrators who were part of the victim’s core family, namely the father. Aside from that, there was 1 case with a category other than family in which the perpetrator was the victim’s neighbor (10%).

According to both Table 5 and Table 6, violence against women and children are most likely have a known person as the perpetrator (60.5% in women and 40% in children). There is a difference in violence wound pattern as seen in Table 2 in which in this study, women tend to have contusion (50%), meanwhile children are most likely having abrasion (60%). Both have the same prevalent location which is head.

A study about US Emergency Departments found that contusion/abrasion are the main diagnoses in child and adolescent assault victims (Loder et al., 2020). This has also been reported in a study in Habib Bourguiba University Hospital Sfax, Tunisia, where bruises and abrasion represent the predominant injuries (Bardaa et al., 2020). The abrasion pattern that is commonly found in violence against children was also found in RSUD Porsea Toba (Marissa et al., 2022). Abrasion is also the top list of physical abuse among Iranian high school students (Pirdehghan et al., 2020). The most common location of injury is also consistent with

this study, with the head being the most affected part due to this body's area being the most exposed (**Bardaa et al., 2020**).

In violence against women, violence was occurred commonly by their spouse. This is in line with a study conducted in the United States in which found that men are more likely to commit sexual abuse, coercive control, and stalking against women, and that women are far more likely to be injured during domestic violence incidents (**Swan et al., 2008**). In a study of US Emergency Departments, it is found that when the perpetrator was a spouse/partner, the assault victim was most often female (**Loder et al., 2020**). A hospital-based Sexual Assault Care Center (SACC) Canada found that the use of physical violence and verbal threats, as well as the victim's visible minority status were discovered to be significant predictors of spousal/boyfriend assault clients. Physical violence and verbal threats were found twice as frequently by intimate partners (**Stermac et al., 2006**).

Parents were found as the most frequent perpetrators in violence against children. This is in line with a study in Iran, in which school parents, more than any other groups, were found to be guilty in severe forms of neglect, psychological, physical, and sexual abuse (**Pirdehghan et al., 2018**). Another study on the prevalence of violence against boys and girls in Indonesia discovered that the main perpetrators were the parents. In the meantime, perpetrators of sexual violence against children may be close to the child and in a position of trust and power (**Kurniasari et al., 2018**). There was a significant relationship between parent's education, parent's occupation to violence against children (**Pirdehghan et al., 2020**). Other factors that have a significant relationship to violence against children include family income, parental divorce, a positive history of abuse in parents, substance abuse or addiction in parents, and different types of abuse (**Pirdehghan et al., 2018; Pirdehghan et al., 2015**).

In the meantime, for traffic accident cases, the most common age category was 18-25 years (30.7%), with Kabupaten Sleman domicile (66.9%), and students as are the most frequently encountered job (46.6%). A study in Russia shows that the proportion of young drivers aged 18-25 years old who are risk-taking is quite high (15%). Risky driving, as well as the widespread among young people belief in their superiority in performance and reaction speed, knowledge of the car, becomes the cause of road

accidents, including those resulting in death and injury (**Popov, 2021**).

Another study conducted in DI Yogyakarta shows that factors of unsafe conditions and unsafe actions influence the fatality of accidents involving children. Unsafe condition factors include other cars engaged in accidents, hazards, mixed traffic, and a lack of infrastructure, while hazardous action elements include exceeding the speed limit, disorderly behavior, and the usage of safety equipment (**Suparmanta, 2019**).

While for traffic accident's characteristic of injury in Table 3, abrasion (61.5%) is the most frequent type of wound in cases of traffic accidents. It follows research in Indonesia states that the highest proportion of injury types due to road accidents is abrasion (65.9%). This pattern is also almost the same as the research conducted in India, where abrasion is also the most common superficial external injury to two-wheelers (84.2%) and pedestrians (80%) (**Ambade et al., 2021**).

Traffic accidents by motorcyclist often result in abrasions because when they fall motorcyclists will usually be dragged away due to the repulsive force, friction between asphalt, clothing and skin will result in abrasions on the parts that come in direct contact (**Lulie and Hatmoko, 2006**). This may also be due to the fact that when the victim's body falls from the vehicle onto the road, injuries may result from collisions or contact between the victim and the road or secondary injuries (**Kepel et al., 2019**).

As per location of injury in traffic accident, in this study, lower extremity is found in majority of the cases (58.7%). A study in India also found lower limb injuries in the majority of road traffic accidents in Karachi (**Shamim et al., 2017**). A study in Manado also found that the majority of traffic accident victims are males with the most pattern of injuries being abrasions on the extremities followed by bruises on the head (**Kepel et al., 2019**). This has different result with other study conducted in Indonesia, stating head injury (33,2%) ranked first among all traffic accident cases (**Riyadina et al., 2009**).

In this study, as seen on Table 3, the age of the patient has a significant relationship to the severity of injury. There are two similar studies with different samples tested. A study with subjects of school students in four Southeast Asian countries found that in Thailand and Indonesia the risk factors of injury are being male, substance use (smoking and drinking alcohol), and

psychological distress. The highest influence of psychological distress was found with fighting injuries (**Peltzer et al., 2012**).

Meanwhile another study from Malaysia with the data from students participating in Malaysia Global School-based Student Health Survey (GSHS) shows that age was not significantly associated with serious injury. In their study, adolescent who had been bullied, had involved in physical fighting and substance users (smoking, drinking or drugs) were more likely to report serious injury compared to those with no such experiences (**Hasim et al., 2015**).

Physicians are likely to be the first professional contact for survivors of any abuse and violence, thus they need to ask patients who present with typical symptoms of abuse and violence and those with symptoms of abusive behavior ([www.racgp.org.au](http://www.racgp.org.au)). According to a study conducted across 14 states in the United States, women who suffered blunt intentional trauma had very different injury patterns than those who were hospitalized for traffic accident or falls (**Crandall et al., 2004**). In this study, a known perpetrator is responsible for 80% of assault-related blunt force and penetrating injuries to women. Women may not feel safe or comfortable discussing the cause of their injury with their healthcare provider if the perpetrator is intimate. In these cases, physicians must rely on historical and physical evidence to suggest abuse. The findings of this study show that different injury mechanisms are linked to different injury patterns. Face and head injuries are strongly associated with intentional injuries in women.

Any medical personnel should be suspicious of the following symptoms of sexual abuse include urinary tract pain complaints, the presence of disease caused by sexual contact (sexually transmitted disease), recurrent vaginal infections in children under the age of 12 years, pain and vaginal discharge, disturbance in urinating and defecating activity, adolescent pregnancy, injuries to the breasts, buttocks, lower abdomen, thighs, and the area around the genitals (genital) and the rectum (anal), the underwear is ripped and stained with blood, and seminal fluid (semen) was discovered around the mouth, genitals, or anus, as well as around clothing (**Ikhsan et al., 2022**).

Another findings that may be noted in females are genital erythema, genital bruising, genital abrasion, edema, hymenal transection, hymenal clefts and notches, labial fusion, and vaginal discharge in pre-pubertal girls (**Payne et al., 2011**). Meanwhile for anal

findings in males and females may include anal/perianal erythema; anal/perianal bruising; perianal venous congestion; anal fissures, lacerations, scars, and tags; and reflex anal dilatation.

Recognizing suspected violence against children according to the U.S. Department of Justice includes injures to immobile children (particularly infants), injuries to the body's protected surfaces (e.g. back, buttocks, ears, inside mouth, genitalia and inner thigh, neck, extremities, underarms), and several injuries in various stages of healing.

A systematic review found that when abuse is suspected, bruising must be evaluated in the context of the patient's medical, social, and developmental history, the explanation given, and non-abusive bruising patterns. Bruises in non-mobile infants that are over soft tissue areas and bear the imprint of an implement, as well as multiple bruises of uniform shape, are signs of abuse (**Maguire et al., 2005**).

A statement from the parent or guardian, as well as witnesses, about how the injury occurred will aid in determining whether the injury was accidental or abusive. A statement from the parent or guardian explaining why he or she delayed in seeking medical treatment is critical to the investigation because caregivers frequently postpone or fail to provide treatment for an injured child to conceal physical abuse. The abusing parent or caregiver may also dress the child in oversized clothing or confine the child to a home for extended periods of time ([www.justice.gov](http://www.justice.gov)). Abused children may be unkempt and/or malnourished, they may act inappropriately, such as with aggression, or they may be shy, withdrawn, and have poor communication skills while others may be obnoxious or hyperactive ([www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov)).

## Conclusion

From this study, it can be concluded that the most frequently encountered patients with injury are patients in the age range of 18-25 years old, most frequent jobs were students, with Kabupaten Sleman being the most common place of origin. Among all types of violence, physical violence was the most common type of violence. The most common type of wound of violence is contusion in women and abrasion in children; most injuries frequently occur on the head. Most patients elect to be outpatients. Abrasion was

the most common type of wound found in traffic accident cases, and the most common location was on the lower extremity. In terms of medical treatment, the majority of patients opt for outpatient care. There is a significant relationship between the patient's age and the injury's severity, which brings them to either outpatient or inpatient and/or having surgery as medical treatment.

### Study Limitations

The limitations of this study are some missing data from the medical record that must be excluded from the analysis. In the job section for children, some were listed as unemployed, not students, because children should not be working at their age. The number of wounds was not clearly stated in the medical record, rendering the characteristics of injury insufficient.

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